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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,659	10/03/2001	John Hey	16954-00007	5241
28534	7590	10/17/2006	EXAMINER	
MIRICK, O'CONNELL, DEMALLIE & LOUGEE 100 FRONT STREET WORCESTER, MA 01608			FINEMAN, LEE A	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/682,659

Applicant(s)

HEY, JOHN

Examiner

Lee Fineman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 14-19, 21-26, 41 and 42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-19, 21-26, 41 and 42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

This Office Action is in response to an amendment filed 21 August 2006 in which claims 41 and 42 were amended. Claims 14-19, 21-26, 41 and 42 are pending.

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 14-19, 21-26, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margulis et al. in view of Craig, US 4,740,836.

Regarding claims 14-19 and 21-26, Margulis discloses a system for stereoscopic viewing of an image (column 4, lines 27-49) comprising a means (260, CRT or LCD as well as column 1, lines 22-43 and column 6, lines 20-22) for displaying upon a generally flat surface a conventional stereoscopic pair of images (column 4, lines 27-49), proximate but separately from one another; and a means (245 with 404 and 510) for improving the stereoscopic match between the two images as viewed by distorting at least one of the images (column 13, lines 36-43 and column 16, lines 42-67) to counteract distortion caused by the viewer's perspective relative to the image (column 16, lines 42-50) or caused by image-mismatch caused by a viewing-device (column 16, lines 51-67) and an optical device adapted to be placed in front of and proximate to a viewer's eyes (e.g., glasses, column 4, lines 37-49). Although Margulis discloses multiple means of perceiving a stereoscopic image with an optical device (see column 4, lines 27-49),

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Margulis does not disclose an alternative means for providing the stereoscopic impression wherein the particulars of the optical device include a means for re-angling the optical axis for at least one eye, so that each eye generally targets the center of a respective one of the pair of images; in which the optical axis for exactly one eye is reangled; wherein the optical device comprises a pair of mirrors for each reangled eye; and wherein the optical device comprises a prism for each reangled eye; and the specifics of the image arrangement in which the images are arranged one above the other; wherein the images are displayed upon a surface large enough to subtend an immersive portion of the viewer's visual field; and wherein the images comprise the display for a video game, a televised display of still- or motion-picture images and a computer-graphics display of still or motion picture images. Craig teaches a system for stereoscopic viewing of an image (fig. 4) comprising a means (11, fig. 1) for displaying upon a generally flat surface a conventional stereoscopic pair of images (13 and 15, fig. 1), proximate but separately from one another and in which the images are arranged one above the other; wherein the images are displayed upon a surface large enough to subtend an immersive portion of the viewer's visual field (column 8, lines 6-14); in which the optical axis for exactly one eye is reangled (column 5, lines 21-36); and wherein the images comprise the display for a video game, a televised display of still- or motion-picture images and a computer-graphics display of still or motion picture images (column 4, lines 37-39 and column 5, lines 1-2); and an optical device (41), which is a prism, adapted to be placed in front of and proximate to a viewer's eyes (fig. 4), which device is worn by the viewer (column 6, lines 11-14) comprising a means for re-angling the optical axis for at least one eye, so that each eye generally targets the center of a respective one of the pair of images (fig. 5 and column 7, line 35-column 8, line 14), employed to effect a stereoscopic meld

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of two 2-dimensional images (column 5, lines 49-55); and wherein the optical device alternatively comprises a pair of mirrors for each reangled eye (column 7, lines 31-34 and figs. 5b<sub>1</sub> and 5b<sub>2</sub>). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the specific optical device and image arrangement of Craig in the stereoscopic system of Margulis et al. to eliminate the need to adjust for eye spacing of different viewers (Craig, column 2, lines 59-64) and provide the flexibility to view images in both two and three dimensions (Craig, column 2, lines 48-49).

Regarding claims 41 and 42, Margulis et al. in view of Craig as set forth above further disclose the viewing device located between the viewer's eyes and the generally flat surface (see at least fig. 4 of Craig).

### *Response to Arguments*

3. Applicant's arguments filed 21 August 2006 have been fully considered but they are not persuasive.

Applicant argues that Margulis et al. is only concerned with correcting distortions associated with projecting onto a curved screen and with differences in projection distances and does not disclose image correction caused by the viewer's perspective relative to the image or image mismatch caused by a viewing device. The examiner respectfully disagrees. First, Margulis et al. techniques are not limited to a curved screen. Although, curved screen processing is addressed, the same techniques can be used with CRT- or LCD-based direct view systems (column 6, lines 20-23), which are well known flat screens (column 1, lines 22-43), and in head-mounted displays (see column 12, lines 45-52). Secondly, as stated in on column 13, lines 36-43,

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the image correction can be applied to a stereoscopic system in which each of the viewer's eyes sees a different monocular view of a scene and the geometric transformation can construct each of the scenes. Therefore when Margulis et al. precompensate for image distortions like keystoneing (column 16, lines 42-50) it would be images to each eye (i.e., distortion caused by the viewer's perspective relative to the image). Further when Margulis et al. compensate for radial distortion (see column 16, lines 51-67) introduced by lens systems (like a viewing-device in a stereoscopic device, e.g., glasses, see column 4, lines 37-49), Margulis et al. is correcting for image-mismatch caused by a viewing-device. Therefore, the rejection is appropriate.

4. It is noted by the Examiner that the specification and claim objections made in the previous Office Action have been withdrawn due to amendment by the Applicant.

### *Conclusion*

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
LAF

10 October 2006

  
MARK A. ROBINSON  
PRIMARY EXAMINER